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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/602,468 | 06/23/2003 | Venkat Selvamanickam | SPP 20.070 | 2661 |
| 34456 | 7590 | 02/12/2007 | EXAMINER | |
| LARSON NEWMAN ABEL POLANSKY & WHITE, LLP | | | AUSTIN, AARON | |
| 5914 WEST COURTYARD DRIVE | | | ART UNIT | PAPER NUMBER |
| SUITE 200 | | | 1775 | |
| AUSTIN, TX 78730 | | | | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 02/12/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|------------------------|----------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/602,468 | SELVAMANICKAM ET AL. | |
| | Examiner | Art Unit | |
| | Aaron S. Austin | 1775 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 November 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 23-34 and 36-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 23-34 and 36-43 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-34 and 36-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannhart et al. (US Patent Application Publication No. 2005/0173679).

Mannhart et al. teach a superconductive article comprising a Ni-alloy substrate tape overlayed with a plurality of individually identifiable superconductive films disposed one atop another and in direct contact with each other (Figure 5 and Example 1). A buffer, such as YSZ, is applied prior to application of the superconductive layers to the substrate (Example 1). The buffer layer may have a bi-axial texture (paragraph [0010]). The superconductive layers are a few microns in thickness (paragraph [0010]), usually about 0.5 to 1.5 microns (paragraph [0024]), and each layer may have a different thickness from the other layers (Figure 5). Thus, when multiple layers are combined, the thickness of the resulting superconductive layer falls within the ranges claimed. $\text{ReBa}_2\text{Cu}_3\text{O}_7$ is a suitable material for the superconductive layers, where Re is a rare earth or Y (paragraph [0041]). The current density exceeds 10^6 A/cm^2 ([paragraph [0011]]).

Mannhart et al. do not specifically teach the substrate as being stainless steel or Inconel, a superconducting layer comprising Sm123, the claimed multiples of layers, nor the current capacity or current density as claimed. Further, in the alternative to the above arguments, the thicknesses as claimed are not specifically taught, although they are implicitly taught as described above.

Regarding claims 26 and 27, substrates made of nickel based alloys or similar materials are taught (paragraph [0010]). Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use steel or Inconel as the substrate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 35-36, superconductors may be applied as multilayers (paragraph [0041]). Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the multiple layers as taught in Figure 5, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 38-40 and 43, the superconductive layers are a few microns in thickness (paragraph [0010]), usually about 0.5 to 1.5 microns (paragraph [0024]), and each layer may have a different thickness from the other layers (Figure 5). Thus, when multiple layers are combined, the thickness of the resulting superconductive layer falls within the ranges claimed. Further, it would have been obvious to one having ordinary

skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 41, as Mannhart et al. use like materials in a like manner as claimed, it would be expected that the superconducting article will have the same characteristics claimed, particularly the current capacity, absence a showing of unexpected results.

Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

Response to Arguments

Applicant's arguments, see the Remarks, filed 11/27/06, with respect to the rejection under 35 USC 112 have been fully considered and are persuasive. The rejection has been withdrawn.

Applicant's arguments filed 11/27/06 with respect to the Mannhart reference have been fully considered but they are not persuasive. In particular, applicant argues Mannhart does not teach multiple superconductive layers beyond the embodiments of Fig. 5, wherein two superconductive layers are in direct contact with each other, and Fig. 6, wherein a multilayer structure is formed using intervening intermediate layers. However, Mannhart et al. teach superconductors may be applied as multilayers

(paragraph [0041]). The term “multilayers” is interpreted to include embodiments beyond Figs. 5 and 6. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the multiple layers as taught in Figure 5, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Applicant further argues that the methodology taught by Mannhart precludes the direct contact of superconductive layers without an intervening buffer layer. However, the purpose of the buffer layer is to prevent reactions between the other layers (e.g., oxidation), not the superconductive layers themselves (paragraph [0039]). This interpretation is furthered by Fig. 5 wherein direct contact of the superconductive sheets is permissible and the buffer layers prevent reaction with the substrates. Therefore one of ordinary skill would not hold the teachings of Mannhart as teaching away from the direct contact of superconductive layers, of which multiple layers are taught (paragraph [0041]).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASA

JOHN J. ZIMMERMAN
PRIMARY EXAMINER